

WHAT IS CLAIMED IS:

1. An apparatus for accessing data stored on an optical disc, comprising:
  - a row data interface, for receiving a demodulated row data from the optical disc;
  - 5 a first buffer, for storing the row data from the row data interface;
  - a first decoder, for performing a first decoding to the row data stored in the first buffer and generating decoded data, wherein the decoded data is stored into a memory, the decoded data is also sent to an error detection code generator, the error detection code generator generates the error detection codes for the decoded data, the generated error detection codes are stored into the memory; and
  - 10 a second decoder, for reading the error detection codes from the memory, storing the error detection codes into a second buffer other than the memory, and performing a second decoding on the data stored in the memory when the data stored in the memory is sufficient to be assembled as a complete data block.
- 15 2. The apparatus of claim 1, wherein when the second decoder performing the second decoding on the data stored in the memory, if there are any errors occurring after the second decoding, the errors in the memory and in the second buffer are corrected accordingly.
- 20 3. The apparatus of claim 1, wherein the first buffer is located in an embedded memory.
4. The apparatus of claim 1, wherein the second buffer is located in an embedded memory.
- 25 5. The apparatus of claim 1, wherein the first buffer and the second buffer are located in an embedded memory.
- 30 6. The apparatus of claim 5, wherein the embedded memory is an SRAM.

7. An apparatus for accessing data stored on an optical disc, comprising:
  - a row data interface, for receiving a demodulated row data from the optical disc;
  - a buffer, for storing the row data from the row data interface;
  - a first decoder, for performing a first decoding to the row data stored in the first buffer and generating decoded data, the decoded data is stored into a memory different from the buffer, the decoded data is also sent to an error detection code generator, the error detection code generator generates the error detection codes for the decoded data, the generated error detection codes are stored into the memory.
- 5 10 8. The apparatus of claim 7, wherein the buffer is located in an embedded memory.
9. The apparatus of claim 8, wherein the embedded memory is an SRAM.